

ROUTER USING SWITCHING-BEFORE-ROUTING PACKET  
PROCESSING AND METHOD OF OPERATION

ABSTRACT OF THE DISCLOSURE

A router comprising: i) a switch fabric; and ii) N Layer 2 modules coupled by the switch fabric, each of the N Layer 2 modules capable of receiving data packets in Layer 2 frames and forwarding the received data packets using Layer 2 addresses associated with the Layer 2 frames, wherein a first one of the Layer 2 modules comprises a Layer 3 routing engine capable of forwarding a first received data packet through the switch fabric directly to a second one of the Layer 2 modules using a Layer 3 address associated with the first received data packet if the first Layer 2 module does not recognize a Layer 2 address associated with the first received data packet.